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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,152	09/06/2000	Kazuyuki Sakoda	7217/62589	9227

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EXAMINER

PHUNKULH, BOB A

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/656,152

Applicant(s)

SAKODA ET AL.

Examiner

Bob A. Phunkulh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15, 22-52 and 56-65 is/are allowed.
- 6) ☒ Claim(s) 16, 17, 21 and 53-55 is/are rejected.
- 7) ☒ Claim(s) 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 20 is objected to because of the following informalities: it appears that the claim suppose to be depends on claim 18 instead of claim 16 since the claimed limitation cited "said transmission path equalization circuit" in line 2, where the limitation is cited in claim 18. For examination, the examiner treats the claim depends of claim 18. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 54 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what it meant by "the transmission path estimation processing is carried out by differential modulation by the transmitting apparatus" as cited in the claim i.e. the preceding claim cited the receiving apparatus the estimation of the signal.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-17, 21, 53, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Sokada et al. (US 5,907,583), hereinafter Sokada.

Regarding claim 16, Sokada discloses a receiving apparatus for receiving a multi-carrier modulated signal to which a predetermined transmission path estimation is processed by a transmitting apparatus, comprising:

an orthogonal transform circuit for orthogonally transforming a received signal (the FFT 41 transform the received signal, see figure 13),

a transmission path estimation circuit for estimating a characteristic of a transmission path in response to a processing of an estimation of the transmission path carried out by said transmitting apparatus based on an output signal of said orthogonal transform circuit (the transmission line estimation by circuit 43, see figure 13), and

a data output circuit for correcting said received signal in response to a result of the estimation of said transmission path estimation circuit and outputting the received data (demodulating the received signal by the demodulation circuit 44 and Viterbi decoding circuit 17, see figure 13),.

Regarding claim 17, Sakoda discloses a receiving apparatus as set forth in claim 16, wherein said orthogonal transform circuit performs a fast Fourier transform on said received signal (FFT circuit 41 transform the received signal, see figure 13).

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Regarding claim 21, Sakoda discloses the data output circuit outputs the received data of a predetermined number of bits based on said received signal in accordance with the modulation method of the received signal (col. 10 lines 15-37).

Regarding claim 53, Sakoda discloses a reception method for receiving a multi-carrier modulated signal to which a predetermined transmission path estimation is processed by a transmitting apparatus, comprising the steps of:

orthogonally transforming a received signal (the FFT 41 transform the received signal, see figure 13),

performing transmission path estimation processing based on said orthogonally transformed received signal (the transmission line estimation by circuit 43, see figure 13),

correcting said received signal in accordance with a result of said estimation of a transmission path (demodulating the received signal by the demodulation circuit 44), and

outputting the received signal (signal S40, see figure 13).

Regarding claim 55, Sakoda discloses a pilot signal is added to the transmission signal by the transmitting apparatus, said pilot signal is extracted from among a received signals, characteristics of the transmission path are estimated in accordance with the extracted pilot signal, and a phase and an amplitude of the received signal are corrected in accordance with the result of estimation (see col. 9 lines 17-32).

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Allowable Subject Matter

Claims 1-15, 22-52, and 56-65 are allowed.

Claims 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Or:

Hand-delivered responses should be brought to Crystal Park II, 2021

Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(703) 308-8251**. The examiner can normally be reached on Monday-Friday from 8:00 A.M. to 4:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Douglas W. Olms**, can be reach on **(703) 305-4703**. The fax phone number for this group is **(703) 872-9314**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh



TC 2600
Art Unit 2661
April 13, 2004